

Applicant : Wei-Zhong Li  
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Attorney's Docket No.: 13854-006001

### REMARKS

Claims 1-27 are pending, of which claims 1, 9, 20-22, and 25 are independent. Claims 9, 20-22, and 25 have been amended. No new matter is added.

The Examiner rejected claims 22-27 under 35 U.S.C. § 112, second paragraph. The Examiner rejected claims 1-4, 8-12, 14-15, and 21 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,360,037 to Riza ("Riza"). The Examiner rejected claims 20, 22-23, and 25-26 under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent No. 6,178,044 to Li et al. ("Li"). The Examiner rejected claims 5-7, 13, and 16-19 under 35 U.S.C. § 103(a) as being unpatentable over Riza in view of Li. Applicant respectfully traverses the rejections.

The Examiner objected to claims 24 and 27 as being dependent upon rejected base claims, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims. Applicant appreciates the Examiner's identification of allowable subject matter in claims 24 and 27.

### **Section 112 Rejections**

Claims 22-27 stand rejected under § 112, second paragraph. The Examiner states that the claims 22 and 25 are incomplete for omitting essential structural cooperative relationships of elements. Applicant has amended claims 22 and 25 to include cooperative relationships of the claim elements and respectfully submits that the rejection to claims 22-27 has been overcome.

### **Section 102(e) Rejections**

Claim 1 stands rejected under § 102(e) as being anticipated by Riza. Claim 1 is directed to a 2x2 optical switch that includes one or more light beams exiting from the first component group with a first chosen polarization when the singular polarization switch is disabled. Riza does not disclose or suggest a first component group where one or more light beams exit with a first polarization.

The Examiner states that Riza discloses the claimed first component group in FIG. 3 as elements 14a and 26a. Applicant respectfully disagrees. Element 14a is an optical circulator and element 26a is a fiber-optic lens. See col. 4, lines 59-61. The light exiting element 26a is not

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singularly polarized with a first polarization. Instead the light exiting element 26a is randomly polarized. The randomly polarized light is then separated into vertically and horizontally polarized light (*e.g.*, polarized beams 30 and 32 of FIG. 3) by beam displacing prism 28. *See* FIG. 3; col. 4, lines 55-66. In contrast, claim 1 requires that the one or more beams of light exiting the first component group have a first polarization. Applicant respectfully submits that claim 1, as well as claims 2-8, which depend from claim 1, are in condition for allowance.

Claim 9 stands rejected as anticipated by Riza. Claim 9, as amended, is directed to an optical switch that includes a first component group operable to provide light beams having a first polarization to a switching component group. For at least the reasons set forth above with respect to claim 1, claim 9, as well as claims 10-19, which depend from claim 9, are in condition for allowance.

Claim 20 stands rejected as being anticipated by Li. Claim 20, as amended, is directed to an optical switch that includes a structured half wavelength plate being operable to rotate a polarization of light passing through a portion of the structured half wavelength plate. Li does not disclose or suggest an optical switch including a structured half wavelength plate operable to rotate a polarization of light passing through a portion of the structured half wavelength plate.

The Examiner states that FIG. 2 of Li discloses a structured half wavelength plate. Li discloses an optical device that includes elements 112 and 120, which are pairs of half wave plates. *See* FIG. 2; col. 4, lines 17-21. Each pair of half wavelength plates rotate the polarization of all the light passing through. *See* col. 5, line 58 to col. 6, line 24. Li does not disclose or suggest a structured half wavelength plate that only rotates the polarization of a portion of the light passing through. Applicant respectfully submits that claim 20 is in condition for allowance.

Claim 21 stands rejected as being anticipated by Riza. Claim 21, as amended, is directed to an optical switch that includes a first component group adapted to provide an optical output having a first polarization to a switching component group. For at least the reasons set forth above with respect to claim 1, claim 21 is in condition for allowance.

Additionally, claim 21 also includes a switching component group that includes a singular polarization switch. Riza does not disclose or suggest an apparatus having a single

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polarization switch. Additionally, the device disclosed by Riza can not function with only one polarization switch; two switches are required as shown in FIG. 3. In contrast, the optical device of claim 21 functions with only a singular polarization switch. For at least this additional reason, claim 21 is allowable.


Claim 22 stands rejected as being anticipated by Li. Claim 22, as amended, is directed to an optical component that includes a structured half wavelength plate being operable to rotate a polarization of light passing through a portion of the structured half wavelength plate. For at least the reasons set forth above with respect to claim 20, claim 22, as well as claims 23-24, which depend from claim 22, are in condition for allowance.

Claim 25 stands rejected as being anticipated by Li. Claim 25, as amended, is directed to an optical component group that includes a structured half wavelength plate being operable to rotate a polarization of light passing through a portion of the structured half wavelength plate. For at least the reasons set forth above with respect to claim 20, claim 25, as well as claims 26-27, which depend from claim 25, are in condition for allowance.

Applicant respectfully requests that all pending claims be allowed. Please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

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